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RE: DEQ Comments on Source Control Measures Effectiveness Demonstration – City of Portland Outfalls Project – Intergovernmental Agreement for Remedial Investigation and Source Control Measures (DEQ No. LQVC-NWR-03-10) – ECSI # 2425

Dear Ms. Scheffler:

Thank you for your submittal in September 2015 of the Source Control Measures Effectiveness Demonstration report for City outfalls discharging to Portland Harbor. On January 17, 2014, you submitted the Municipal Stormwater Source Control Report for Portland Harbor (and submitted revisions on February 13, 2014) with an accompanying Closure Report that requested a DEQ Source Control Decision and confirmation of completion for termination of the above noted IGA. DEQ distributed the Municipal Report and requested review and comment form EPA and Partners reviewing DEQ's source control work in Portland Harbor. On March 17, 2014, DEQ sent you a letter requesting additional time to review the report and substantial volume of associated materials and to coordinate review with EPA and Partners. DEQ's letter included a draft schedule for accomplishment of the necessary steps to bring the project to closure and requested further discussions with the City on the schedule and process. DEQ received comments from EPA and the Five Tribes in April 2014, and also several unsolicited comments from various responsible parties and others interested in Portland Harbor that were received between August and November 2014.

In consideration of DEQ's review and comments from others, DEQ and the City began meeting in June 2014 to discuss the sufficiency of the project in demonstrating achievement of source control and the steps and timing of project completion. By November 2014, we began coordinated efforts on defining the scope of work needed for demonstrating effectiveness of source control measures implemented and satisfactory basin evaluation completion. Concurrently, DEQ began drafting a source control decision for the City Outfalls Project that will be conditional to successful demonstration of achievement of effective source control. DEQ and the City continued regular staff meetings and work sessions in 2015 until the City was able to submit the Effectiveness Demonstration report in September, which I am providing comment on with this letter.

General Comments

As with the Municipal Report and 50 supporting technical reports and memoranda, DEQ commends the City staff on the thorough and well-presented nature of the Effectiveness Demonstration document. As other commenters on the Municipal Report noted, the complexity of the project and depth of information development and analysis are difficult to convey. This report achieves a good balance between the overall project view and specific details on basin-scale and site-level to allow the reader to comprehend the City's substantial work and rationale for decision-making. DEQ supports the two-tiered approach presented, which includes a standardized decision framework and additional qualitative and quantitative lines of evidence evaluation for identifying basins where additional monitoring may be warranted. However, DEQ disagrees with the narrow objective of demonstrating effectiveness only of measures implemented by the City specifically for recontamination prevention. As such, the analysis omits demonstration that unacceptable risk to in-water receptors is prevented, which is a requirement of the 2005 EPA/DEQ Joint Source Control Strategy for Portland Harbor. Given the extensiveness of City conveyance

system, which comingles on-going discharges from multiple sites in every georegion into the Harbor, a more robust approach to demonstration of source control effectiveness is needed. Refinement of methodologies for evaluating in-water impacts from stormwater discharges is anticipated to occur during evolving discussions between DEQ and EPA. Acknowledgement of which basins rely solely on City and DEQ water programs for long-term effectives versus those with contaminated sites being addressed under DEQ and EPA oversight may be a good exercise.

DEQ offers the following specific comments on elements that should be considered in an acceptable demonstration of effective source control completion. DEQ recommends consideration of these comments, which will lead to additional monitoring than that proposed and more integral application of qualitative lines of evidence. Some revisions to the report may be necessary, along with significant expansion of the proposed sampling and analysis plan in Appendix C, and production of a subsequent results report in support of a source control decision for the City outfalls project.

Specific Comments

1. Footnote 1, Page 1-2: DEQ has not definitely determined that termination of the existing IGA (DEQ No. LQVC-NWR-03-10) will be appropriate until long term effectiveness of source control is demonstrated. While a conditional source control decision can be issued upon finalization of the approved Effectiveness Demonstration and Monitoring Work Plans, the existing agreement may be the most expedient way to ensure adequate DEQ oversight for monitoring work and subsequent reporting.

2. Section 2 Background – Page 2-1: At the end of the first paragraph in the introduction, the City states that "Work conducted by the City under the IGA is separate from work completed by other City programs under different regulatory authorities, such as the MS4 and CSO programs." While DEQ understands the administrative structure of the City's Bureau of Environmental Services has distinctly separate programs for implementation of various stormwater regulatory authorities, the City's Portland Harbor Superfund program provides an opportunity for cross-program interaction. This is particularly important to acknowledge with regard to the NPDES MS4 program and the CSO Abatement program. Both programs are driven by DEQ authorities and have significant overlap with Portland Harbor outfalls source control work. Importantly, one aspect of the criteria developed in 2008 for making a determination on source control completion for the City Outfalls program is "identification of any non-site-specific measures, practices or actions intended to control or improve stormwater discharges from a basin and documentation of their effectiveness. These may include individual and system-wide line cleanouts and repairs, actions that reduce or divert discharges and programmatic elements." As we have discussed, DEQ is using the 2008 criteria in drafting the Source Control Decision staff memorandum, which has been shared as a partial draft with you. The 39 outfalls and associated conveyances evaluated for source control are wholly within the MS4 system, which is permitted by DEQ. The CSO abatement project affected 16 of the 39 outfalls into Portland Harbor, and was initiated by a 1991 DEQ order. Importantly, management practices and control measures applied through these and other City stormwater and maintenance programs have been improved in consideration of information developed during the City Outfalls investigation project and the quality of stormwater discharging into the Portland Harbor is assumed to be significantly improved through implementation of these programs. This needs confirmation, since both DEQ and the City rely on this assumption in drawing conclusions about stormwater source control in DEQ's Portland Harbor Upland Source Control Summary Report, 2014, and the City's Municipal Stormwater Source Control Report for Portland Harbor, 2013. Finally, DEQ and the City will rely on continued implementation and iterative improvement of various stormwater programs to demonstrate that source control of City stormwater discharges into Portland Harbor has been effectively achieved, such that sediment recontamination and unacceptable in-water risk are prevented. Therefore, while administratively separate, the important overlaps of these programs with Portland Harbor source control objectives must be acknowledged and effectiveness confirmed to support a determination of effective source control being achieved.

3. Section 3 SCM Effectiveness Demonstration – Page 3-1: At the end of the second paragraph of the introduction, when discussing source control measures implemented by individual sites, the City states that "The parties that implemented those measures are responsible for demonstrating their effectiveness." DEQ agrees that sites are responsible to demonstrate effectiveness of measures put in place to address discharges from those sites and we are working with each site to do so prior to source control decisions being made for those sites. However, the City storm sewer system conveys discharges from many sites within the various basins and a basic presumption of the City's Outfall Project is that control of each potential source at the site-level will add up to overall control at the end of the conveyance system, where combined discharges enter the river from the outfalls. DEQ views it as the City's responsibility to confirm that presumption through monitoring at the end of the system, at least in a representative fashion.

4. Decision Points table – Page 3-2:

    a. DEQ agrees that Decision Point 2 – whether an outfall discharges to a sediment area of potential concern or not – is a valid decision point for evaluating the potential for sediment recontamination by the outfall. However, in addition to preventing sediment recontamination, the objectives of 2005 EPA/DEQ Joint Source Control Strategy include preventing unacceptable risk to in-water receptors. Therefore, the effectiveness demonstration must also consider in-water risk prevention. DEQ acknowledges that the qualitative and quantitative lines of evidence, as presented by outfall basin in Table 2, begins to get at this demonstration. However, basins ruled out for effectiveness monitoring based on whether or not the outfall discharges to an AOPC (Outcomes 2 and 3 in the table on Page 3-3, on Figure 1 and in Tables 1 and 2) need at least a representative subset of effectiveness monitoring to address potential in-water impacts.
    b. DEQ appreciates that the City captured the nuance described in comment 3 above in Decision Point 5a and agrees that additional effectiveness monitoring data is needed, at the site-level or basin-scale, for confirmation that the basin-scale is represented in drawing basin-scale conclusions.

5. Outcome table – Page 3-3: While DEQ appreciates the nuances between whether source control measures were implemented by the sites, the City, or both, the inclusion of distinct Outcomes numbered 4, 5 and 4&5 is confusing and does not add value to the evaluation. DEQ suggests collapsing all three into one Outcome 4, making only five rather than seven Outcomes total. This will simplify the tables and figures and make the overall rationale easier to follow. The distinction can be preserved, if the City thinks it is valuable, perhaps by noting subcategories of Outcome 4 as a, b, and c; however, the information provided in Tables 1 and 2 already provide specificity on the entities implementing and monitoring source control measures, so these distinctions may not be necessary.

6. Section 3.3.2 Quantitative Lines of Evidence:

    a. Page 3-4: Geometric means are not appropriate for plotting on the rank-order curves of concentrations of contaminants measured at heavy industrial site in Portland Harbor, because the curves are composed of raw data rather than averages. This is consistent with direction DEQ gives to individual sites completing source control evaluations. Because the curves presented in Appendix A also contain the City's raw data, they are acceptable. However, the quantitative entries regarding where the contaminants fall on the curves in Table 2 should be updated.
    b. Page 3-5: DEQ appreciates the compilation of the stormwater data into a summary table (as presented in Table A-1), and also that the City conveyance is subjected to discharges from sites at various permitted concentrations that may be higher than the JSCS SLVs and rank-order curve knees. DEQ recommends giving these two the most weight in a multi-screening level scheme, which is consistent with direction DEQ gives to individual sites completing source control evaluations, and providing additional detail in the text as to potential cumulative impacts within the City conveyance system.

c. Page 3-6: DEQ interprets the knee of the curve for PCBs at approximately 0.3 µg/L, rather than 0.1 µg/l noted by the City in this section.
d. Page 3-6: DEQ directs individual sites to evaluate BEHP at the JSCS SLV at 2.2 µg/L and at the knee of the curve at approximately 3 µg/L, rather than the City's suggestion in this section of five times the SLV.

7. DEQ recommends that additional screening and other considerations be incorporated into the rationale for determining in which basins effectiveness monitoring should be undertaken.

a. Ensure that basins selected are representative of all Outcomes, except Outcome 1, which no longer discharge.
b. Include basins where the existing individual data points indicate that end of system discharges still exceed JSCS SLVs and knees of the rank-order curves, particularly for more than two contaminants for which curves have been developed.

Contaminant	Basins with one or more* data points above the knee of the curve (without subsequent reduction)
BEHP	18*, 45, 47, 52, 52D, 53*, M1, S1, S2
Cd	15, 16*, 18*, 19A*, 22B*, 43, 44*, 45*, 52D, 53
Cr	18, 19, 22D, 44, 45, 47, 52C, 52D, 53, 53A
Pb	22B , 45, 53
Ni	19A, 44, 44A, 45*, 47, 48, 52D, 53
Ag	19A, M2
PAHs	11, 18, 19, 19A, 22, 22B, 22C, 52A, 52D, S1*
PCBs	44

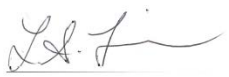
c. Basins for which there is no basin-scale dataset (10A, 13, 14, 17, 42).
d. Basins previously monitored at the basin-scale (for example 16, 17, 18, 19, 22, 22B, 49), such that a longer term comparison can be made, assumptions about land use can be confirmed and recontamination potential can be assessed.
e. Some elements on which the City based decision points need confirmation of effectiveness to support assumptions. These include collective effectiveness of other City stormwater program elements and no significant history of contaminating activities. DEQ recommends sampling in at least one basin where no source control measures were implemented, aside from other City programs (42, 47, 48, 52A, 52C, 53, M2, S5), some of which because there was no significant history of industrial activities or sources.
f. Even if an outfall does not discharge to an AOPC, addressing source control effectiveness for preventing unacceptable risk to in-water receptors is needed. Sampling in at least one basin that does not discharge to an AOPC (10A, 11, 13, 14, 15, 42, 53, S5, S6) is recommended.
g. While some basin-scale effectiveness monitoring has occurred, confirmation or expansion of these results would be useful. Of the basins categorized as Outcome 4&5 and with multiple elevated contaminants in the list above, some effectiveness monitoring has been completed in Basins 44 and 45. While the subsequent evaluation of PCBs in storm pipe cleanout solids in Basin 44 shows effective decreases, additional elevated contaminants (Cd, Cr, Ni) were not evaluated, though are likely to adhere to sediment and have similar results as PCBs. In Basin 45, some limited post-storm pipe cleanout sampling was evaluated in 2008. As these basins offer similar value in further monitoring, DEQ recommends additional monitoring in Basin 45, to confirm the older effectiveness data and evaluate the five elevated contaminants (and possibly more as determined by screening contaminants beyond those for which DEQ developed rank-order curves).

h. DEQ and EPA identified areas with higher potential for sediment recontamination and unacceptable in-water risk via stormwater (and other pathways). DEQ recommends City effectiveness monitoring include these areas, when City outfalls discharge into them (18, 22B, 43, 44, 45, 52D, M1, M2, S1).
i. Timing of source control measure implementation must be considered in timing of effectiveness monitoring for some basins (16, 18, 52D).
j. Program level assumptions of land use coinciding with increasing levels of contamination should be verified by getting sampling basins representing a variety of differences, including: basin size; industrial intensity; Forest Park drainage contribution; number of permitted sites in basin; etc.
k. The City's Municipal Report minimized the potential contaminant contribution from City roadways throughout the uplands surrounding the Portland Harbor study area. The report lacked basin-specific analysis of City roadways in relation to the stormwater conveyance system, identification of roadway-specific contaminant sources, and information on regular maintenance activities and other source control measures related to roadway sediment and contaminant contributions to the stormwater system. While DEQ acknowledges that roadway contributions in some basins receive regional treatment that has been shown to be effective, more work is needed to identify areas where roadways may not be adequately evaluated or controlled. This evaluation should be part of the revised effectiveness demonstration.
    i. More extensive information is needed in targeted areas to determine whether current programmatic or Portland Harbor-specific source control measures are effective or if additional measures are warranted. Needed information includes: portion of street drainage routed through treatment facilities and any effectiveness monitoring; frequency and equipment used for street sweeping; catch basin maintenance frequency; other maintenance actions; and storm line repair and cleaning history.
    ii. Initial areas to target, based on DEQ observations and communications for cleanup site responsible parities include: Albina georegion – North River Street to North Interstate Avenue and all City streets between; Guilds Lake and Doane Lake/Willbridge Georegions – Northwest Front Avenue from the Fremont Bridge to its terminus, City streets within the OF 16 drainage basin north of Northwest Yeon/Highway 30 to Northwest Front Avenue, City streets within the OF 18 drainage basin west of Northwest Yeon Avenue and into Forest Park; Linnton Georegion –Northwest St. Helens Road/Highway 30 and City streets west into and around Forest Park; T-4/International Slip Georegion – North Lombard Road/North Burgard Road and North Sever Road; Swan Island/Mocks Bottom Georegion – all City Streets within the drainages to OFs M1, M2, M3, S1, S2, S5 and S6.

In support of our on-going collaborative process, I look forward to additional discussions and work sessions to jointly arrive at the best range of representative outfalls to achieve a defensible dataset and phasing of monitoring, as warranted by considerations on timing of source control measure implementation in some basins.

Please contact me with questions and to coordinate on further discussions toward finalizing a path forward and approval of revised elements of the effectiveness demonstration and results reports.

Sincerely,



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Portland Harbor Stormwater Coordinator

ec: Eva DeMaria, EPA